

# COProduction as last resort to make IT projects less doomed to fail

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**Abstract.** In this position paper, we make the point that the tenets of the cultures of participation and co-production, if taken seriously, can reform IT development in organizations for the better. Our idea is to develop complex information systems in an integrated manner with the participatory development of the social tools that could facilitate their dissemination and their wide and satisfied adoption within an organizational setting, in particular a social media and wiki containing process models as-is and to-be, ever refined requirements, change requests, bug reports, incident reports, manuals, feedback surveys, and a communication platform to have designers, developers, clients, prospective end users, and other stakeholders.

## 1 Introduction

The most recurring factors that have been retrospectively associated with the complete or partial failure of IT projects are the lack of user involvement, bad communication among the stakeholders (including end-users) and problems in understanding and collecting user needs and requirements [6]. While the diagnosis of the problem has seemed clear for decades to date, it is still not clear how to treat it and change the current state of affair. To this aim, several engineering-oriented approaches have been proposed, some of which have been recently renovated under the umbrella term “future-oriented technology analysis” [12], in the same mould of FMECA and SWOT analyses. However, these latter techniques have still to be consolidated in few and effective techniques and methodologies, and these latter ones still be put to the test of life and their impact on IS success evaluated. Moreover, chances are that merely technical approaches would likely keep falling short of expectations, since many of the failure factors mentioned above regard a socio-technical and cultural dimension.

The point of this position paper is that the concept of culture of participation must be introduced in the IT development discourse and even its farthest consequences [3], like end-user empowerment and the progressive shift of responsibility from the professional designer to the customer be advocated and promoted. For this to be possible beyond a merely over-simplistic claim, at least two notions of the mainstream discourse must be addressed, deconstructed and finally challenged.

## 2 IT Projects and Projections

The first notion is the very core one of “project”, or better yet, the intrinsic unbalance towards the ideal dimension of an IT artifact development project, (i.e., its models and its design) at expense of the pragmatic dimension of the process by which the artifact is “embedded” into a single social setting.

This abstracting and modelling phase regards a sort of Platonic fallacy, so to say. Any project entails the projection of an idea (as well as the related expectations, hopes, resources) into the future (and hence the unknown): it is, namely, the act of “throwing forth” (pro-ject) this idea through a trajectory of interventions towards its objectivation and materialization. Important steps in this trajectory regard the building of conceptual models: these latter regard both the information structures that represent the reality of interest; the licit transformations (rewritings) these structures can undertake; and the artifact’s and persons’ behaviors that trigger, and are triggered by, these transformations. Other steps regard the detailed and often formal specification of the models mentioned above (indeed, their de-sign); and the development of the physical components that build the whole new artifact up. However, it is a truism to acknowledge that any stakeholder group has its own way to project things into its future of concern and envision the related trajectory towards concrete realization (e.g., the payment of the delivery for the producer, the effectiveness of the delivered product for the payer). This is because this ultimately cognitive process is strongly embedded in the common ground of a social community, its ruling conventions and policies, and the principles and values underlying the whole, that is the culture of that setting.

So far, relatively little emphasis in IS development (and many scholars would rather Freudianly speak of IS design!) has been put on the last arc of the project(ion) trajectory: the landing, so to say, which rather evocatively has been assimilated to a clash, when we speak of impact and impact analysis; and on what roles should deal with this delicate process of intertwined adoption and adaptation of the new artifact into the flesh and bones of the setting it is supposed to support. Very significantly, semiotics has been called in this process [5]: it is more a matter of continuous communication (even delegated to the graphical interface!), mutual understanding and reciprocal alignment between the designers and the users, than a rational and balanced exchange between a demand and an offer of economic nature that is regulated by a formal contract.

## 3 Participation and Particip-action

This leads us to the second concept we aim to challenge. This second notion is that of “involvement”, as usually used in the phrases “user involvement”, “stakeholder involvement”. To involve is a verb that entails the idea that someone (the IT producer) is taking an active stance in making someone else (the user) part of a “common” endeavor, and that this latter is involved, passively or with little control of the process, as this is ultimately governed by the producer. This

latter asks the users what he or she needs, is responsible to have elicited and collected those needs accurately and completely, to have understood them and translated into specific features of the artifact to be.

However, if requirement gathering is the frailest phase of the modern IS development methodologies[15], chances are that this is due to the same perceptual aberration that occurs in regard to the idea of “project”. An outside-the-box way to solve this conundrum would be to address the construction of an IT artifact as a process of co-production [4], where both designers and users produce something in it, and to propose as the main factor leading to the success of this co-productive process the inception and promotion of a culture of participation within the community that would host and embed the new artifact, as well between selected members of this community and of the professional community of the IT vendor. We could call this approach one oriented to foster a Culture Of participation for co-production, or COProduction for short.

## 4 COProducing Value in Computing

The idea of COProduction has a least two possible articulations. A weaker one: IT specialists and prospective end-users (not so few of them, but two good questions could be “how many” and “who” to enroll to represent them taking into consideration both the management and the shop floor) participate in several opportunities of idea proposal, discussion and progressive formalization of these ideas. This is, very shortly said, the main idea behind co-design and Participatory Design [10, 16]. Computational means could play an important role in this scenario: idea management systems, collective deliberation systems[9], and ad-hoc qualitative techniques, like attitude surveys[2] and Exploratory Focus Groups [11].

A stronger articulation: IT specialists build and configure the tools by which users can easily build and configure (the symmetry is intended) their own structures (in the sense explained above), and they do it by assembling together simpler constructs that partly address the main needs emerged during the inception phase of the IT project. This is the main, and more ambitious idea of the meta-design and End-User Development (EUD) [7].

The difficult thing of a COProduction approach is to have the courage to cut with the past clearly and to apply it in a completely new mindset. Otherwise also the most innovative articulation of it, i.e., meta-design, would risk to produce a semiotic drift or misalignment (that is when something in the IT artifact means something for a group of stakeholders and something else for another group) between the building blocks conceived by the meta-designers according to the indications of the involved end-users, and the structures assembled by the end-users when they are left more in control of the development process later on. Or, even more surreptitiously risky, that the unidirectional (and Platonic) idea of project (i.e., the idea that some people, be they professional designers or end-user designers can shape the Artifact on advance and on an essentially abstract and theoretically stance, irrespective of its necessary post-adoption changes) infects

also the EUD scenario, by replicating the same shortcomings, but with even less awareness of the most common mistakes and blatant naiveties.

The only way to go beyond these two potential new modes of failure is to embrace the COProduction idea seriously, and devise and test new methodologies that are aimed at developing both the artifact and the culture in which it can be iteratively refined with the increasing participation of the end-users.

## 5 Tools for COProduction

Concretely, this means to conceive initiatives and interventions that are specifically devoted to incept, foster, achieve, and maintain this kind of culture: for instance, by planning events of co-design and focus groups, administering periodic surveys to gather needs and wishes and collect feedback and perceptions, setting up a lean social media aimed at helping all the interested users come together around the project (like a scaffolding [14]), and through which to solicit and collect any kind of useful contribution for the development of the artifact-related resources.

In particular, this social media could encompass a wiki manual or FAQ section that is open for contribution to all of the employees of the hosting organization, a Forum where to discuss problems and share solutions, a Blog by which to spread news and discuss the milestones achieved, a Requirement/Bug Management System to provide continuous feedback, and the like. These interventions should also encompass the establishment (and precise characterization in terms of tasks and skills) of roles that would be made accountable for the success of these distributed and collective initiatives, like the gardener [13] or the maieuta-designer described in [1].

## 6 Conclusions

Although to build such a socio-technical scaffolding around a new IT artifact can be costly and require an additional effort, the costs of failure in IT projects can be much higher, as experience shows [6] and ask for alternative solutions. Future research must grow strong enough to give the potential entailed by the COProduction tenets to those organizations that want to reach success faster and be able to host (that is en-able) cycles of joint co-evolution (of the tasks, the people, the tools [8]) to cope with the never-ending change of the context around them and their needs.

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